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ENTOMOLOGICAL NEWS

Heteronotus vulnerans.

NOVEMBER, 1903.

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Ernest Swinhoe, 37 Addison Gardens, London W., England

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AUGUSTUS RADCLIFFE GROTE, M.A.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIV. NOVEMBER, 1903. No. 9.

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Augustus Radcliffe Grote, M.A.

Prof. Grote died of endocarditis on September 12th last at Hildesheim, Hanover, Germany, where he was Director of the Roman Museum. He was born on February 7, 1841, in Aigburt, near Liverpool, England. His father was a German from Danzig and his mother an English-woman. He came to America when a child and spent his early days in New York. About 1884 he left the United States and resided at Bremen, Germany, and went to Hildesheim in 1895. He leaves a wife and six children. His scientific work began about 1862, at which time he was a contributor to the Proceedings of the Entomological Society of Philadelphia. The first three volumes of the Bulletin of the Buffalo Society of Natural History (1873-1877) contain numerous articles on American Lepidoptera, by Grote, mostly on moths. He was curator of the Buffalo Society, and a very active member. The three volumes mentioned contain no less than twenty-seven articles. There are a few, however, devoted to subjects non-entomological, such as "Descriptions of New Crustaceans from the Water Lime Group," "On the Peopling of America." Some other writings not relating to natural history are the follow-

ing: Genesis I, II, An Essay on the Bible Narrative of Creation, the New Infidelity, Rip Van Winkle, a Sun-myth, and other Poems. He was also a student of ancient roman matters. He left Buffalo in 1882 (?) for New Brighton, Staten Island, New York, where he remained until he took up his residence abroad. Strecker* down to 1878 lists about one hundred articles by Grote which appeared in the following publications: Ann. N. Y. Lyc. Nat. Hist.; Proc. Acad. Nat. Sci. Phila.; Bull. Buffalo Soc. Nat. Hist.; Can. Ent.; Bull. U. S. Geol. and Geogr. Surv. iv, 1; Proc. Am. Philos. Soc.; Proc. Ent. Soc. Phila.; Trans. Am. Ent. Soc.; Rep. Pbdy. Acad. Sci.; Stett. Ent. Zeit. Since 1878 numerous articles have appeared in Proc. Am. Philos. Soc.; Can. Ent.: Papilio, etc., and European journals. In 1862 the American Entomological Society honored him with membership. In July, 1879, he entered into entomological journalism and edited the North American Entomologist, published by Reinecke, Zesch and Baltz in Buffalo, New York. One volume of twelve numbers appeared. This was a very creditable publication, and among its contributors were distinguished students of entomology. He was an authority on the entomological fauna of Western New York State, particularly the region about Buffalo, but will be best remembered for his systematic work on North American Noctuidæ. He described numerous species of Lepidoptera, aggregating over a thousand. His work made a great impression on our literature of the subject, and was painstaking and accurate. His descriptions are good, and his species well known. He will undoubtedly be classed as one of the greatest students of American Lepidopterology. His catalogues were most valuable and universally used. A Check List of the Noctuidæ of North America was published by Reinecke and Zesch, at Buffalo, in 1876, and a new Check List of North American moths at New York in 1882. His valuable collection, containing the bulk of his types, was sold to the British Museum some years ago.†

* Butterflies. Moths. Syn. Cat. Reading 1878.

† The portrait of Mr. Grote was supplied by his old friend and coworker Mr. Ottomar Reinecke of Buffalo. It was taken in 1877.

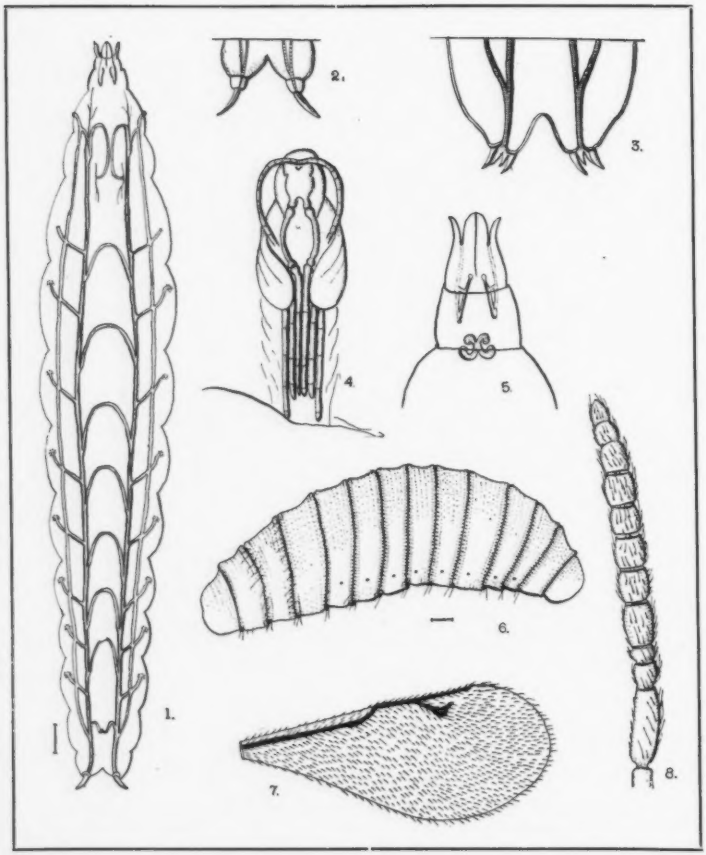


Fig. 1. Tracheal system of *Diplosis resinicola*.
Fig. 2. Anal spiracles of young larva.
Fig. 3. Same of full-grown larva, drawn on a scale half as large as Fig. 2.
Fig. 4 Empty pupa case as seen projecting from lump of resin.
Fig. 5. Head and supernumerary segment, showing "breast-bone."
Fig. 6. Larva of *Syntasis diplosidis*.
Fig. 7. Wing of adult of same.
Fig. 8. Antenna of same.

The Resin-Gnat Diplosis and Three of its Parasites.*

By Lida S. Eckel.

(With Plate XIV.)

Pinus rigida is the most common pine in this immediate vicinity. July first the many empty pupa-cases projecting from the lumps of resin which are abundant on the two-year old (and older) parts of the pine stems, showed that the adults of *Diplosis resinicola* O. S. had been escaping in numbers, and attracted my attention.

The orange-colored larvæ of this species living in numbers within the lumps of resin were first reported by Mr. Sanborn †; the adult was described by Osten Sacken in 1871 ‡; and it has since been recorded from New York to Florida on various species of pine. The fact that the transformations are undergone within the lumps of resin were first noted by Packard ||.

A point of primary importance to the adult insect is a safe place to deposit its eggs. During the first week in July while they were emerging in numbers from the lumps of resin on the twigs kept in the laboratory, they deposited their eggs in quantities on the fresh resin provided, never upon the old hardened lumps, and never upon any of the twigs or leaves. No new lumps of resin appeared upon the stems, which would have been the case had the *Diplosis* been in the habit of puncturing the bark and thus providing resin for itself. In a cluster of infested pines where many fresh pupa-cases were observed upon the resin, and where adults were occasionally seen flying about, I cut a number of slits in the twigs. In every instance (over twenty) within twenty-four hours, the *Diplosis* had discovered and utilized the fresh resin. It was interesting to see that where the pitch exuded in a spherical drop, the bright orange eggs were arranged regularly around its equator projecting radially. A few of these eggs hatched

* A study made at the Marine Biological Laboratory, Woods Hole, Mass., 1903, under the direction of Mr. C. T. Brues.

† Proc. Bost. Soc. Nat. Hist. XII, 93.

‡ Trans. Am. Ent. Soc. III, 345.

|| Fifth Rept. U. S. Ent. Com., p. 797. See also Comstock's Manual of Insects, p. 447.

within forty-eight hours. From this it appears that the *Diplosis* take advantage of resin lumps supplied sometimes by accident, no doubt, to the trees, and sometimes by other insects.

The very young larvæ creep about beneath the surface of the lumps of resin, and rapidly grow to twice their original size, gradually making their way toward the part of the twig from which the supply of soft resin is exuding. This movement causes them to collect in a group with their mouths close together and their orange red bodies extending toward the surface of the lump. After fifteen or eighteen days they have grown from 3 to 7.5 millimetres in length, having undergone numerous changes. Externally can be seen the supernumerary segment directly behind the head, into which the latter is incessantly withdrawn, the peculiar "breastbone" on the ventral surface (see Fig. 5), and the horned anal spiracles, all characters of the Cecidomyid larvæ. The very young have the hook like spines across the ventral surface of each segment. These disappear with growth, and the entire skin becomes covered with fine spines, curving backward. In the ontogeny they appear first on the anterior part of each segment, but beginning with the posterior ones.

The tracheal system which is diagrammed in figure 1, can be readily studied in the live animal or in ones which have been mounted alive in glycerine. Near the anal spiracles the tracheal trunk on each side divides into two main tubes, one dorsal and one ventral, which extend forward as far as the first thoracic segment. At this point the ventral one sends branches to the head, and the dorsal bends back to supply the thorax. In the first thoracic and first seven abdominal segments, each dorsal trachea sends a tube to the ventral one, which continues to the side, and opens in a black-capped spiracle a little below the lateral line of the body. In the third thoracic segment, although the tube is conspicuously present, I failed, in any larvæ examined, to find an external opening. In the abdominal segments, except the last two, the dorsal trunks are connected by long cross tubes, which tough but flexible, form intricate patterns with the ceaseless movements of the larvæ. The lateral spiracles are always imbedded in the gum, and the

terminal ones kept at the surface. The tracheal system undergoes no change with larval growth, except the odd developement about the anal spiracles which is shown in the comparative diagrams (Figs. 2, 3).

Is the food derived from the twig or from the resin? I made note of the following points: 1. The mouth-parts are exceedingly soft and delicate. 2. The young grow rapidly near the surface of the resin. 3. The twistings of perhaps a dozen spiny-skinned larvæ hollow and smooth out a round cavity, the irritation causing a constant supply of fresh resin, so that no lump containing live larvæ ever becomes entirely hardened. This soft resin is full of microscopic splinters of wood fibre, which would probably have been consumed had the larvæ detached them with their mouths. The digestive tract, so far as I could ascertain, contained none of them. 4. Where the resin supply was abundant, without any activity on the part of the larvæ, no cavity was formed and no splinters were present in the resin, although the larvæ continued to grow normally. 5. I placed a drop of resin upon which nineteen eggs had been deposited in the laboratory, upon the smoothly cut surface of a sound twig. There was a fair flow of resin, and in two weeks, and even after two weeks, when the larvæ were quite large, the only damage to the twig was a small spot just beneath them where the cells appeared dead. There was, however, no roughening or cavity.

The pupæ measure 5 millimeters in length. The head and appendages are covered by a black pupal integument, only the shrunken abdomen retaining its deep orange color. They lie with their heads toward the surface of the lump, inside the innermost end of the detached larval skin, which is not shed, pupation going on within it. The loosened skins are white and papery, and extend to the surface with their inner ends so closely packed that they adhere to each other, and slightly to the twig. Thus the whole eight, or perhaps a dozen, form a core-like mass with irregularly radiating rays, which can be lifted out entire more easily than separately.

When ready to emerge, the insect pushes itself outward by a backward and forward movement of the thorax and abdo-

men, and by the time it reaches the surface end of the larval skin it has worked a hole in the top of the head-piece. The motion in freeing itself is interesting. The insect is upright; the thorax is repeatedly bent gently forward and jerked backward; as soon as enough of an antenna is free, it uses the joints and pulls the end out; the same with the legs; it then mounts the projecting pupa-case, draws out the abdomen, steps lightly down upon the resin, spreads its wings and flies off. The proceeding is very business-like; at each stage it seems to know exactly what to do, and does it promptly. The whole procedure occupies less than four minutes after the head emerges. The projection of the pupa-case (Fig. 4) is incidental to the efforts, as the escaping insects often walk over the resin itself.

The number of larvæ that develop in any one lump is controlled partly of course by the number of eggs deposited, but more by the supply of resin. Eggs deposited in the spring when the resin flows abundantly, have a better chance for life than the succeeding generation, many of which perish by the drying of the small drop, and by the attacks of parasites. Throughout July a Proctotrupid parasite of the larvæ was frequently observed. This is one of the smallest of the parasitic hymenoptera, *Polygnotus pinicola* Ashm. described by Ashmead as a parasite of *Diplosis pini-inopis* (Bull. U. S. Nat'l Museum, No. 45, p. 307), but now mentioned for the first time, I believe, as a parasite upon *Diplosis resinicola*. July was too late for me to find the larval stage, as they were already pupating, as many as twenty in a single larval skin of the fly. They feed upon the *Diplosis* larvæ, consuming them completely, leaving only the tough tracheal tubes untouched, which together with the spiny outer skin serve to identify these blackened skins as those of the *Diplosis*. The latter now lie tangentially or slanting near the surface of the resin, the irritated larvæ being rendered no doubt too restless to remain in position. The *Polygnotus* lie closely packed back to back, generally with their heads toward the surface tip of the parasitized larvæ. Before escaping they practise a few preliminary exercises by popping the head out and back.

Through August the pupæ of the *Diplosis* are destroyed in great numbers by two species of Chalcid-flies. Of the first one, a Pteromalid (*Syntasis diplosidis* sp. nov.), I secured numbers of the larvæ, pupæ and adults, and append a description of the adult at the end of this paper. The larva when grown is three millimeters in length, yellowish-white, the skin in very fine transverse ridges. At the articulations between the segments, the ridge is emphasized, and from it grow fine long bristles ventrally, or completely around on a few of the segments (Fig. 6).

There is but one *Syntasis* in each larval skin which remains white. The younger ones are attached externally to the *Diplosis* pupæ, but when they are fully grown no trace of the pupae remains, not even the tough pupal integument. The parasites lie at the inner end of the larval skin, where the departed host lay. There they pupate, and the adults escape through the tube-like larval skin, just as the host would have done. A whole group of larval skins sometimes changes inhabitants in this way in August, and whenever a group is invaded by the Chalcis-fly, the undestroyed pupae will be found dead. When the intruder is present the bark is undermined and brittle and the wood friable. Have these things anything to do with the entrance of the parasites? No larvae or adults appeared in my material before August.

The second species of Chalcid-fly, of which I obtained only a few specimens is a species belonging to the genus *Eupelmus*.

As the species of Syntasis is an undescribed form,* I give here its description.

Syntasis diplosidis sp. nov.

Female.—Length 3.5 mm.—Metallic blue-green, the blue predominating, antennæ black except at the base, legs dark at base, yellowish at the tips.

Head three times as wide as long, rather coarsely confluently punctate, shagreened between the punctures; lateral ocelli as far from the eye as from the median ocellus; mandibles yellow, the four teeth at the apex black; palpi yellow. Antennæ twice as long as the head height; scape

*Mr. Ashmead, to whom specimens were sent, writes that it is new, and has suggested that it be described in this paper which contains the account of its habits.

yellow, not reaching to the median ocellus; pedicel small and very short, one ring joint, flagellar joints of equal length and gradually increasing width, except the first, which is twice as long as the others, and the last, which is small and more or less triangular. Prothorax much more finely punctured than the head, especially below; remainder of the thorax rugulosely, separately punctured. Wings hyaline; marginal vein twice as long as the stigmal and one and one-half times as long as the post-marginal. Under side of thorax and coxæ green, shagreened. Legs honey yellow, brownish on the femora and the apical joints of all the tarsi. Abdomen blue-green, polished; slightly longer than the thorax. Body everywhere sparsely whitish pilose.

Type locality, Woods Hole, Mass. Cotypes are in the U. S. Nat'l Museum and in the Amer. Mus. of Nat. History.

Described from numerous specimens bred, as described in the preceding account, from larvae of the Cecidomyid (*Diplosis resinicola.*)

Citheronia sepulcralis in Pennsylvania.

By John M. Geddes.

On looking over Mr. Philip Laurent's list of the moths of Eastern Pennsylvania, published in the News, I notice that he has omitted *Citheronia sepulcralis*. In a letter received from Mr. Laurent, he states that he has never heard of its being found in Pennsylvania, the farthest northern limit of which he knows being the vicinity of Washington, D. C.*

I have taken specimens of both larva and imago in Williamsport, Pennsylvania, and vicinity; and, although not common, they are not extremely rare, as I took three specimens of the moth, two males and a female, within a week, and found two larvæ in a morning's walk. The first specimen of *sepulcralis* I captured was in July, 1902, at an electric light in the northern part of the city, and I thought it a Sphingid moth of some species until I got it down from the wire to which it was clinging. It was a male, and had probably just emerged, as it was absolutely perfect. This last July I captured two males and a female at electric lights, all imperfect specimens, especially the female. Before she died, however, she laid about

* The type came from Andover, Mass. It has been also found at Easton, Pennsylvania, and Manchester, N. H., and doubtless other places north of Pennsylvania.—Eds.

seventy eggs, which hatched in ten days, producing larvæ which very much resembled those of *regalis* except in their color, which was orange and black at first, but changed to light tan and black after a few hours feeding.

Some of the eggs did not hatch, and with the ones that did I had very poor luck ; only one reached the last stage, and it died before pupating. When first hatched I tried them on white pine, which they ate but did not seem to like particularly. I finally gave them pitch pine to which they took naturally, and for three or four weeks grew beautifully ; but in undergoing the last molt trouble commenced, and they began to die without any apparent provocation. Within a few hours after death they were reduced to an evil-smelling semi-liquid state, and a very light touch would cause the skin to break and fall apart. I can offer no explanation of this, as they seemed perfectly healthy and contented up to twenty-four hours before death.

About the second week in September, I found two mature *sepulcralis* larvæ feeding on pitch pine in a grove just north of the city, and later found one on yellow pine. They are of a rather peculiar color, shading from yellowish to purplish brown, and being much wrinkled and humped. The thoracic segments and the dorsum of the eleventh segment contain long yellowish horns, and there are also subdorsal, sublateral and substigmatal rows of spines. They are high feeders usually and, unless feeding in a bunch of needles, are hard to see ; as, when on a limb, they very much resemble a piece of loose bark.

Up to July, 1902, I had never heard of *sepulcralis* being taken in Pennsylvania ; but it may be quite local, as pitch pine (*Pinus rigida*) and yellow pine (*Pinus mitis*), on which it feeds, are both quite abundant in this locality.

Williamsport, Lycoming County, is within seventy miles of the northern border of Pennsylvania, so that it is quite a gain over Washington, D. C., for a northern range for *sepulcralis ;* and possibly it may be found still farther north than Pennsylvania.*

*See ENT. NEWS., 1890, p. 124, and 1892, p. 232.—EDS.

Some Experiments with a Chrysalis.

The only pretext for the presentation of the following experiments, conducted upon a chrysalis, is that an acquaintance with the behavior of an organism in that particular stage of development may disclose new peculiarities of interest to students of "mental evolution" in animals.

Let *a*, *b*, *c*, *d* and *e* (apex) represent the segments of the chrysalis. Also let the right and left sides of the segments, with the front view up, be designated by *ra*, *rb*, *rc*, *rd* and *re*; and *la*, *lb*, *lc*, *ld* and *le*.

Having rapped the chrysalis at different points of the segments until the organism showed apparent sign of agitation; segment *a* at *ra*,—after a short lapse—was rapped,—as was naturally expected, *ra* contracted and *la* expanded. Next *rb* was attacked; as in the case of *ra*, it contracted. As a matter of course, *lb* expanded. The same repetition continued until *re* was reached. As the chrysalis now stood, *ra*, *rb*, *rc*, *rd* and *re* remained contracted; and *la*, *lb*, *lc*, *ld* and *le* expanded. Next *la*, *lb*, *lc*, *ld* and *le* were attacked respectively, as a consequence of which *ra*, *rb*, *rc*, *rd* and *re* expanded according to the contraction of the corresponding opposites. Thus far these experiments elicited no evidence that the activities displayed were prompted by some mental operations. However, before proceeding further, let us note what these experiments disclosed. It was observed that when any particular segment was hit on either left or right side, the succeeding segment remained unagitated; that is, it showed no sign of disturbance. For instance, when *a* was struck at *ra*, *rb* remained motionless until it itself received a blow.

A second series of experiments was performed with the same results as disclosed by the first series, except towards the close, when a change in the monotony of impulses occurred. No sooner was any of the segments hit, than the succeeding one showed apparent sign of disturbance, yet the second succeeding one remained unagitated.

The third series of experiments disclosed further encourag-

ing signs of mental operations underlying the displayed activities. When *ar* was rapped, *br*, *cr*, *dr* and *er* contracted respectively instead of remaining motionless until each received individual blow. Apparently from previous experience, the organism foresaw, when *ar* was hit, that the succeeding segments were doomed to the same unpleasantness, so a total contraction was signalled to all on one side.

The fourth series of experiments was conducted after the chrysalis had been left undisturbed for a number of days. The blow was not, as in former experiments, given at either *ra* or *la*, but at the apex. The change of starting points was made purposely to give the organism a larger field for exercise of higher mental activities than hitherto.

Shortly after the experiment was resumed, the organism so readily recalled the experiments of the previous days that when *re* or *le* (at the apex) was touched, the succeeding segments on either side (not both) contracted successively. After a continuation of similar experiments, the organism learned to contract both sides of segments simultaneously in response to impulse starting from any point of the body.

Hopes of further experimenting were frustrated by untimely extinction of life.

List of Types of Catocala in the British Museum.*

By George F. Hampson.

Catocala belfragiana Hbrv.
" *illecta* Walk.
" *whitneyi* Dodge.
" *nuptialis* Walk.
" *westcottii* Grote.
" *chelidonia* Grote.
" *sordida* Grote.
" *nuptula* Walk.
" *alabamæ* Grote.
" *mira* Grote.
" *basalis* Grote.
" *cœlebs* Grote.
" *adoptiva* Grote.
" *unijuga* Walk.

Catocala semirelicta Grote.
" *junctura* Walk.
" *sinuosa* Grote.
" *verrilliana* Grote.
" *concumbens* Walk.
" *bunkeri* Grote.
" *relicta* Walk.
" *levetteii* Grote.
" *angusi* Grote.
" *residua* Grote.
" *obscura* Streck.
" *simulatilis* Grote.
" *subviridis* Harvey.

*The above list of types was kindly sent to me by Sir George F. Hampson, for my own use, but considering it worth while, I take the liberty of offering the same for publication.—Wm. Beutenmuller.

The Coccidae of Ohio.

By F. M. Webster.

In the June number of the current volume of the Entomological News, Mr. George B. King finds what appears to him to be sufficient grounds for a republication of a previous partial list of the Coccidæ of Ohio, by myself and Mr. Burgess. The chief objection to the former list seems to lie in the fact that names were used, that, though they have stood for years, and no one in reading the paper would be in the least doubt as to the identity of the species, they did not accord with recent changes in nomenclature. These older names have since been applied to these same species, and, in fact, are still being so applied by those who are writing upon subjects relating to them. It is unfortunate that the real progress in entomology in this country is hampered, by the fact that anybody can take up and revise a genus or group of insects, revive names that have not been in use for a lifetime, mean nothing, as they may have been used to describe mere local forms and do not apply to the true species at all. Frequently the ink is hardly dry from one of these entomological earthquakes before another writer, with more zeal than knowledge of his subject, starts another and sometimes a worse one, though it not unfrequently happens that in this way species get thrown back under their previous names. To such an extent is this true that those who are obliged to use these terms in the applied science pay little attention to such seismic phenomena, but continue to apply whatever name is best known, as being the one that will be least likely to be misunderstood by the reader. This seems to have been the most serious crime committed by Mr. Burgess and myself in putting out our partial list, and for which I myself have no further apology to present. There are a few corrections in the revised list that are of value, and for these we are of course thankful, but these could have been given without a republication of the whole paper, and would have been less autocratic in appearance.

Mr. King takes occasion to add a supplement to the list of

species, but I in turn must beg to republish the same in part, for reasons that will be clearly apparent to the reader.

"*Eulecanium quercitronis* Fitch on *Quercus albi* at Catawba, Ohio, July 29, 1902. The locality and scale are new to the Ohio list." But for the errors that follow, this might pass uncriticised, but there is a Catawba, Catawba Station and Catawba Island in Ohio, the latter along the south shore of Lake Erie, and the two former fully 135 miles to the south. Which is it?

"*Eulecanium fletcheri* Ckll., on cedar at Catawba, I. S. O., July 29. 1902," was probably intended for Catawba Island, but to one not perfectly familiar with Ohio, the locality, as given, would be too obscure to be of any value.

"*Aspidiotus perniciosus* Comst., kilmarneck willow (*Salix capræ* var. *pendea*) at Pinesville, O., July 19, 1902." The typographical error in the use of "kilmarneck" for kilmarnock does not materially obscure the author's meaning, but the location, "Pinesville" is unknown in Ohio, though there are localities of this name in several other States.

"*Aspidiotus ostræformis* Curtis, on willow, Pomesville, O., July 19, 1902. A new locality and food plant for Ohio list." The last statement is again literally true, as this species had not been reported from willow in the State given, and there is no such place in Ohio or the United States, for that matter, so that the locality given for both this species and *Mytilaspis ulmi* L., might better have never been published. Besides, the occurrence of this last species, anywhere in Ohio, is no more important than the finding of the bed bug in Boston. Many others of the so called leading errors are errors in citing wrong authorities, in which we followed Prof. Cockerell's "Check List of the Coccidæ" in the Bulletin of the Illinois State Laboratory of Natural History.

It is to be hoped that, when Mr. King attempts to republish another such list, he will revise, and possibly rerevise, his localities before allowing his manuscript to go to print. And, while I have the greatest regard for his perseverance and industry in the face of difficulties that few can appreciate, I must be excused for still continuing to apply old and well

known names to some of our common species in preference to those new and untried, and which are liable to change with the next revision of the group or genus to which they belong. Life is too short to spend much of it in following out the endless number of synonyms that are being constantly added to our lists of insects, if one expects to do anything else, especially as these changes are wholly matters of opinion and the reason for which seems to exist only in the eyes of the persons responsible for them.

Nests of Agenia Architecta Say.

By S. Arthur Johnson.

While collecting the nests of *Anthophora occidentalis* last winter, I came upon a number of nests of the above species. They were formed within the tunnels of *Anthophora*, which are about 10mm. in diameter, the first cell being attached to the tunnel wall by a curved base. The cells are joined end to end, run lengthwise the tunnel, and number from two to five in each series. One tunnel furnished three parallel series of cells. The imago makes its exit by breaking through the lateral wall of the cell instead of the end as in most species of bees and wasps.

Say (Vol. 1, p. 303) gives the following description of the nest.

"The insect forms neat mud nests under prostrate logs and stones. They consist of short cylinders, agglutinated together alternately, and each composed of little pellets of mud, compressed or rather appressed to each other. When these are adjusted to their places on the edge of the cylinder, each has a fusiform shape, and the slender end of one laps over that of another, and the convex part of the pellet of the succeeding layer is placed against this duplicature, so as to restore the equality of the edge. This arrangement gives the surface an alternate appearance."

Adult insects bred from the cells were determined by H. T. Fernald and photographs of the nests and wasp made by C. P. Gillette.

A Dexiid Parasite of the Sow-Bug.

By C. T. Brues.

During the past summer while collecting insects near Woods Hole, Massachusetts, I chanced upon a specimen of the sow-bug *Porcellio* which had evidently been dead for some time. On rolling over the log under which it was concealed in company with many living specimens of its own species, the chitinous remains were accidentally broken apart, disclosing within its body the orange-colored puparium of a fly.

This attracted my attention, and was brought home in hopes of obtaining the adult fly. After some days the latter appeared, a small, intensely black Dexiid. It proved to be a member of the genus *Melanophora* Family Dexiidæ, and agrees very well with the description given by Schiner (Fauna Austriaca, II) of *Melanophora roralis* Linn., a species common to both Europe and North America.

The larvæ of another European species of this genus, *helicivora*, has been found by Goureau (Ann. Soc. Ent. France, II, I, 77), in a snail (*Helix conspurcata*), upon which it is evidently parasitic. Shimer has described a species from Illinois parasitic on the Chrysomelid beetle *Diabrotica*. From his figure (Am. Nat. V, 219), it is probable, however, that the fly is not a *Melanophora* at all, since the first posterior cell is open and not closed by a long petiole as in the other species of the genus.

The puparium of *M. roralis* is deep orange yellow in color, with the anal respiratory tubercles blackened. It is quite smooth and shining except at the posterior tip, and measures 5mm. in length, which is about the size of the adult fly. It occupies almost all the available body space in the parasitized *Porcellio*.

The species of *Porcellio* from which my specimen was bred is probably *P. scaber* Latr., and is extremely common at Woods Hole under fallen logs. The fly is of general occurrence in the same region, although never very common.

Mr. J. Chester Bradley has entered Cornell University, and his address is 325 Dryden Road, Ithaca, New York.

On two Earwigs of the genus Labia from Costa Rica.

By James A. G. Rehn.

These specimens were received for examination too late to be included in a general study of the earwigs collected by Messrs. Schild and Burgdorf (*vide* Proc. Acad. Nat. Sci. Phila., LV, (1903), pp. 299-312).

Labia annulata (Fabricius).

1793 (*Forficula*) *annulata* Fabricius, Entomolog. Syst., ii, p. 4. ["Americæ meridionalis Insulis."]

Labia arcuata Scudder, Proc. Boston Soc. Nat. Hist, xviii, p. 257, 1876.

One female; Carillo, Costa Rica (Schild and Burgdorf.) [U. S. N. M].

This specimen differs from the usual type in the absence of yellowish markings on the pronotum.

The name here revived for this species seems to be perfectly applicable. This fact has already been noticed by Bormans and Krauss (Das Tierreich, XI Lief., Forficulidæ und Hemimeridæ, p. 69), who, however, did not revive the name.

Labia auricoma n. sp.

Type: ♀; Piedras Negras, Costa Rica. (Schild and Burgdorf). [Cat. No. 6942, U. S. N. M].

Allied to *L. chalybea* Dohrn, but differing in the smaller size, the yellow colored pronotum (which is also of comparatively smaller size and has the posterior margin more arcuate), the hairs on the abdomen being golden instead of black, in the posteriorly constricted tegmina and the small exposed area of the wings. Relationship also appears to exist with *L. championi* Bormans, but the latter is separated by the unhaired body, the short tegmina, subequal abdomen, and different coloration.

Size very small; body stout, centrally constricted. Head polished; antennæ composed of fourteen joints, sub-moniliform. Pronotum transverse, not equalling the head and considerably less than the tegmina in width; anterior margin truncate, posterior arcuate, the laterals sub-parallel; transverse central depression marked, the median portion with a distinct longitudinal sulcus anteriorly. Tegmina broad, subequal in width in the basal half, tapering in the apical portion; lateral sections deflected; scapular angle well rounded; apical section gently rounded;

surface rugulose. Exposed portion of wings very small, not one-seventh of the length of the tegmina, rounded, surface as in the tegmina. Abdomen centrally expanded, the surface beset with fine hairs, and toward the apex with distinct bristles. Supra-anal plate narrow, transverse, the apical margin truncate, centrally with a broad, longitudinal depression. Forceps very short and stout, simple, the tips meeting, the whole with a strong upward curve. Subgenital plate narrow, transverse, apical margin very broadly rounded. Limbs stout, the femora considerably inflated.

General colors solid black and reddish brown. Head polished black, antennæ, palpi, mandibles, and a trace on the clypeus brown. Pronotum brown, palest laterally. Tegmina and exposed portion of wings dull black. Abdomen dark brown, each dorsal segment edged with yellowish brown; ventral surface uniform dull ochraceous. Forceps and limbs rich reddish.

MEASUREMENTS.

Length of body,	5.2 mm.	Length of tegmina,	3.2 mm.
Length of pronotum,	.7 "	Anterior width of tegmina,	1.5 "
Width of pronotum,	.7 "	Length of forceps,	.7 "

Another Yucca-feeding Insect.

By Mary E. Murtfeldt, Kirkwood, Mo.

The Yucca plant, which has contributed so largely during the past twenty-five years to the fascinating chapter of the interrelations of plants and insects, still continues to afford interesting subjects of study to the entomologist. As an example of this, while collecting moths of *Pronuba* and *Prodoxus* from the blossoms of *Yucca filamentosa* on June 15, 1902, I perceived that the segments of the perianth were extensively mined by small larvæ of exactly the color of the blossoms, but which betrayed their presence by the large transparent spots which resulted from their appropriation of the opaque tissue. As a micro-lepidopterist I was naturally disappointed to find, upon examination, that these were coleopterous larvæ, but determined to make the attempt to rear them, and as it was very probable that the parent insect might also be found in the flower, a number of small beetles were taken, among which was a handsome little Nitidulid of a red-brown color with black elytra which were truncate and abbreviated. My conjecture that these were the parents of the miners proved later to be correct.

A considerable number of the mined blossoms were also gathered and placed in two or three small jars upon sterilized garden soil, as it was feared that sand might not be congenial to them. These blossoms deliquesced rapidly and fresh ones were supplied which the larvæ promptly entered—a habit common among dipterous and coleopterous leaf-miners, but unusual with lepidopterous species. By the 19th, however, all the larvæ had entered the ground, several resting in perpendicular tunnels against the glass, from two-thirds to over an inch beneath the surface, in excellent position for the convenience of the observer.

The full grown larva is 6 mm. in length by 1.5 in diameter, which is nearly equal throughout. Form subdepressed, surface smooth, color immaculate milk-white, except the tips of the trophi which are pale brown. The head, cervical plate, the three-jointed antennæ, the not very strongly developed legs and the smooth spines of the posterior segment are corneous and translucent.

These larvæ were all nearly grown when taken and their development must have coincided with that of the blossoms in a single panicle, which is very brief.

By June 27th the larvæ which were visible against the glass had transformed to short thick pupæ which, except in the matter of size, resembled that of *Ips fasciatus* as figured by Dr. Forbes. Supposing that they would continue in this state for some time,—perhaps over winter,—no exact description of these pupæ was taken, and I was much surprised to discover on July 6th that the second transformation had taken place and the beetles were already perfected. Now comes the interesting and, as seems to me, somewhat unusual phase of their life history. They did not emerge from the ground or even change position in their resting places, but when the contents of one of the jars was turned out upon a paper the beetles manifested considerable activity, and when placed upon the hardened earth in another jar immediately burrowed into it evidently for concealment and protection during hibernation. I scarcely expected that they would survive the winter under the unusual conditions of their close quarters and in the hot

dry air of my study, but on April 1st two fine specimens were found in one of the jars, and between that date and the 12th several more emerged. This probably antedates by nearly two months the period of their natural emergence out of doors.

That the vitality of this tiny insect in the imago stage should have been able to withstand the ten months abstinence from nourishment, the comparatively high temperature, the compact and dry condition of the earth in the rearing jar, and even the disturbance of having its cells broken when the earth was turned out for examination and being subject, through this, to an unwonted, though brief activity, and yet come out in a state of perfection equal to those developed under accustomed conditions appears to me noteworthy.

The species was kindly determined for me by Dr. Schwarz, of the National Museum, as *Carpophilus melanopterus* Erich., with the remark: "Known from Georgia, Texas and Mexico, but by no means common. The species usually found in Yucca blossoms is *C. pallipennis*."

A New Ammoplanus.

By William H. Ashmead, M. A., D. Sc.

Ammoplanus cockerelli sp. nov.

♀.—Length 2.5mm. Black, the surface smooth and shining, except the metanotum which is opaque, shagreened and with some raised lines; the mandibles, except the teeth, the palpi and the tegulæ, white; antennæ pale testaceous whitish beneath; legs black the tips of trochanters, the apices of the femora, all tibiæ except a brownish spot toward apex of the hind pair and the tarsi, pale honey-yellow; wings hyaline, with the subcostal vein towards apex, and the large stigma brown; the other veins are pallid or nearly hyaline.

Type.—Cat. No. 6930, U. S. N. M.

Hab.—Las Cruces, N. Mex.

This interesting species is dedicated to its discoverer, Prof. T. D. A. Cockerell, who took it three or four years ago, on September 23rd.

It is allied to *Ammoplanus* (*Anacrabro*) *lævis* Provancher, described from California, but is proportionately smaller, with a smaller head, and slightly different colored antennæ and tibiæ.

Notes on the Butterflies, of Miami, Florida.

By Philip Laurent.

Now that the time of the year approaches when the eyes of the collecting entomologist turn longingly towards the "Sunny South," it seems to the writer not to be out of place to mention what our entomological friend interested in the butterflies would be apt to find at Miami, Florida, during the winter months. It was the writer's good fortune to spend the greater part of two months at the above named place—February 18th, to April 8th. As might be expected, I was not fortunate enough to capture specimens of all the species known to occur in southern Florida, but the following list no doubt embraces the larger portion of the butterflies that our southern visitor is apt to run across in and around Miami. I have added the species collected by Mr. Morgan Hebard (see Ento. News for October, 1903), as well as several species collected by the resident naturalist of Miami, Mr. Dickenson. To any of my brother, or sister, collectors who should visit this part of Florida, I would advise them to hunt up Mr. Dickenson at once, as he can and will direct you to the best places in and around Miami where you are likely to find good collecting. I have stated in the list such species as I found to be common, and in all other cases it can be taken for granted that the species were more or less rare. Perhaps at some future time I may give to the readers of the News a list of other insects collected during my all too brief stay at this interesting place in Florida. The following list is arranged in accordance with the catalogue published by Dr. Skinner in 1898.

2 *Danias berenice* Cram., common.
6 *Heliconius charitonius* Linn., common.
9 *Agraulis vanillæ* Linn., common.
114 *Phyciodes phaon* Edw., common.
146 *Pyrameis atalanta* Linn.
150 *Junonia cœnia* Hub., common.
152 *Anartia jatrophæ* Linn.
155 *Eunica tatila* H. S., common.
157 *Timeles petreus* Cram., common.
165 *Limenitis floridensis* Streck.
177 *Ancæa portia* Fab., common.
184 *Neonympha phocion* Fab., common.
246 *Calephelis cœnius* Linn.
250 *Eumæus atala* Poey, common.
263 *Thecla melinus* Hub., common.
288 " *acis* Dru.

289 *Thecla cecrops* Fab., common.
290 " *columella* Fsb.
369 *Lycæna hanno* Stoll., cammon.
374 " *theonus* Luc., common.
379 *Pieris ilaire* Godt.
380 " *monuste* Linn., common.
398 *Catopsilia eubule* Linn., common.
402 *Catopsilia agarithe* Bd., common.
409 *Colias cæsonia* Stoll.
433 *Terias lisa* Bd.
454 *Papilio polyxenes* Fabr., common.
455 *Papilio troilus* Linn., common.
462 " *thoas* Linn., common.
467 *Ancyloxypha numitor* Fab., common.
495 *Pamphila attalus* Edw.
509 " *phylæus* Dru., com.
510 *Pamphila brettus* Bd. Lec., common.
519 " *cernes* Bd.-Lec.
526 " *loammi* Whitn.
531 " *maculata* Edw., common.
545 " *vitellius* Fabr.
549 " *palatka* Edw.
595 *Nisoniades petronius* Lint., common.
599 *Nisoniades nævius* Lint.? common.
612 *Pholisora hayhurstii* Edw., common.
620 *Eudamus bathyllus* Sm.-Abb., common.
631 *Eudamus zestos* Hub.
633 " *proteus* Linn., common.
641 *Erycides amyntas* Fab., com.

Aside from the above mentioned species, may be mentioned the following which were collected during the winter months by Mr. Morgan Hebard: *Thecla telea*, *Thecla martialis*, *Eresia frisia*, *Colænis julia*, *Catopsilia statira*, *Anosia berenice* Var. *strigosa*, *Timetes cleuchea*, etc. Mr. Dickensen has also captured around Miami, *Timetes chiron*, as well as the majority of the species in the foregoing list. Mr. Morgan reports the capture of *Danais berenice* Var. *strigosa*, but I can't help doubting this capture, though many of my captures of *Danais berenice* approached this variety, but none sufficiently so to warrant me in referring the specimens to this interesting variety. *Timetes petreus*, as well as *Eunica tatila*, were common enough, but of the many specimens captured nearly all were in poor condition. *Neonympha phocion* differs from our northern examples, in the fact that the anterior wings are not as much produced, besides there are other characters which at once will enable the student to separate the southern specimens from the northern. In *Pamphila vitellius* we have a different species from *P. delaware*, although Dr. Skinner places the latter as a synonym of *P. vitellius*. In *vitellius* the anterior wings are more produced, and the heavy black veining of the wings, alone, is sufficient to distinguish from *P. delaware*.

The Plum Webbing Saw-fly.

By H. T. Fernald, Ph.D., Amherst, Mass.

On June 10, 1902 a letter was received at the Hatch (Mass.) Experiment Station, from Northampton, Mass., which stated that a plum tree in the garden of the writer was being seriously injured by some insect. Specimens sent with the letter showed that it was the work of a saw-fly larva, and that the branches were covered with a web somewhat resembling that of the fall web worm. An examination of the infested tree was at once made, and it was found that the larvæ were nearly full grown, and that the tree (about twelve feet high) was completely covered with webs. These differed from those of the fall web worm in their darker color and in the fact that the webs did not extend from one branch to another to any great degree, but followed the outline of each branch.

On June 26th the larvæ had all entered the ground, where they were found from four to eight inches beneath the surface, and many were so far from the trunk as to indicate that they had dropped or spun down from the branches rather than had crawled down.

Farther studies show that the larvæ burrow down in the earth to a distance of at least six inches from the surface to pass the winter, and that a short period of pupation in the spring is followed about the first of May by the appearance of the adults.

The adult insect agrees with the description of *Lyda rufipes* Marl., published in Bulletin 48, of the South Dakota Agricultural Experiment Station, April, 1896, and the brief account of the habits of that insect there given also agrees with what is here recorded. I learn that specimens of *Lyda rufipes* in the National Museum belong to the genus *Neurotoma*, where the Massachusetts specimens had been placed before Marlatt's description was found, and there can be no doubt that the two are identical. As Marlatt's description seems to have been generally overlooked, I include it in this paper.

During the spring of 1903 the plum webbing saw-fly has been raised and studied in all stages by Mr. E. A. Back, one

of my students at the Massachusetts Agricultural College, and his descriptions follow :

Egg.—1.14 to 1.4 mm. long, .48 to .56 mm. in diameter ; cylindrical with rounded ends ; smooth, lemon yellow before hatching ; empty shells opaque, white. Length of egg stage eight days.

The eggs are laid in clusters along the mid-rib of the newest leaves in a somewhat definite manner. Along the center of the mid-rib the female lays a row of eggs separated from each other by nearly half their length ; on each side of this she deposits another row, the eggs of which alternate with those of the first row. Close to, and outside of these there may be another row, or eggs may be scatteringly laid there. As the leaves expand, the eggs become separated by more than half their length. In the clusters noted, the number of eggs varied from two to forty-five. Egg-laying continues for about eight days.

First Larval Instar.—Length, 3.74 mm. ; width of head, .58 mm. ; body cylindrical, well annulated, greenish when first hatchod, later becoming yellowish white, glabrous. Head viewed from above globular, from the side oval, greenish yellow ; ocelli black ; antennæ black, .22 to .24 mm. long, obscurely seven-segmented, above and to the front of the ocelli ; clypæus quadrate, labium rounded, deeply notched ; three pairs of small thoracic legs present, prolegs absent ; a convoluted fold of skin of a lighter color extends along the sublateral surface, most prominent upon the abdominal segments ; at the posterior end of each fold, on the last segment, is an appendage .24 mm. long, black, three-segmented, and bearing a circlet of spines upon the distal portion of its first segment ; upon segment 13, on each side beneath the sublateral fold, is a rounded tubercle which appears to be an atrophied leg ; a narrow band, interrupted on each side by an oblique whitish line, on the dorsum of the second segment ; there is a spot at the base of each foot, a linear spot on the venter of segments 2, 3 and 4, a spot on the lower valve and the lateral edges, and a median spot bearing a spine on the upper valve of the cremaster—all dull black.

Upon hatching, the young larvæ spin a fine web for support, and then eat through the leaf close to the mid-rib and spin a loose web upon the upper surface, where they remain and feed, drawing the leaf into folds. As they grow larger they eat very rapidly and draw in new leaves as they need more food.

Second Larval Instar.—Length, 6.2 mm. ; width of head, .82 mm. ; appearance as in the previous stage except as noted ; larva now very pale

flesh-color, with a slight grayish reflection on the dorsum; head bright shining yellow; antennæ distinctly seven-segmented; the following areas are shining black—ocelli, antennæ, a large spot covering the dorsum of segment 2, a triangular spot below this on each side and another spot still lower, a small crescentic spot at upper side of base of each leg, an irregular line on each side between the head and prothoracic feet, a small spot between the two anterior pairs of feet, linear spots on the venter as in the previous instar, growing larger posteriorly, anal appendages, hinder border, two spots on the side and the median depression with the spine of the upper valve, together with a large quadrate spot notched anteriorly on the lower valve of the cremaster; sublateral fold distinctly yellow; tips of mandibles reddish brown.

Third Larval Instar.—Length, 13.1 mm.; width of head, 1.12 mm.; same as in the second instar, with the following exceptions: distal portions of antennal segments, legs and anal appendages more or less whitish; mandibles black at tips; spot on dorsum of segment 2 more trapezoidal, with its longest side posterior; two black spots, instead of one, below the triangular spot on the same segment, the anterior one much larger; a black spot on segment 3 behind the posterior angles of the trapezoidal spot and a trace of a spot lower down on the same segment; in general more nearly flesh-colored.

Fourth Larval Instar.—Length, 18 mm.; width of head, 1.7 mm.; diameter of body, 2.75 mm.; larva very fleshy; pigment beneath skin very pink, with steel-gray reflection on the dorsum; head shining yellow, clothed sparsely with white hairs; ocelli black, showing under a lens a white spot in the center; antennæ 1.32 mm. long, tapering, basal segment large, short, second, third and fifth sub equal, fourth nearly one-half the third in length, sixth and seventh together equal in length to the third; labrum, 1.02 wide; maxillary palpi four-segmented, .26 mm. long; labial palpi three-segmented, .24 mm. long, short, stout, tapering evenly; segment 4 annulate; the black markings on segments 2 and 3 have become larger and seem to form a continuous chitinous shield over the dorsum back of the head; linear spots between the legs on the venter interrupted by an indistinct whitish line which extends along the venter; a corresponding darker line extends along the dorsum, interrupted on the second segment by the trapezoidal spot; thoracic legs five-segmented, 1.34 mm. long, black, the distal portion of each segment whitish, as in the preceding instar, and bearing a circlet of spines; tubercles and subventral fold on segment 13 more pronounced, yellow; anal appendages now white in the middle, black at tip and base; median black spot of upper valve of cremaster absent, whole depression whitish; the stout spine rising from the center of this depression short and curved forward.

After about six days in this instar, the larva begins to turn greenish, becomes shorter, and finds its way to the ground, in

which it forms a cell, where it remains till the latter part of the following March, when it pupates.

Pupa.—About 11 mm. long, 3 mm. in diameter; naked, and of a light green color. It is a "pupa libera," and in this form continues till about the first of May.

Adult (from Marlatt, Bull. 48 S. Dak. Expr. Sta., p. 17).—"Female. Length, 11 mm.; expanse 18 mm; robust, flattened; head very coarsely, rugosely punctured, thorax with more scattered and finer punctures, shiny; abdomen very finely shagreened; anterior tibiæ without side spur; cross vein of medium [median?] cell very rudimentary, scarcely projecting one-third width of cell; antennæ 21-jointed, third joint three times as long as fourth; claws rather deeply and finely notched; color black, shining; mandibles and legs for the most part reddish-yellow; extreme tip of posterior tibiæ and all tarsi, except base of metatarsal joint of fore and middle legs, brownish black; elongate spot on center of clypæus, spot at base of mandible, and at upper inner angle of compound eyes, together with the tegulæ and base of wings, whitish-yellow; wings nearly hyaline, nervures, including stigma, dark brown, nearly black; a very slight smoky shade obscures outer half of both wings.

"Male agrees with female in structural and colorational features, but is about one-fifth smaller."

In forming their webs, the larvæ wriggle about half their length from the web already made, and by carrying the thread of silk back and forth, advance the nest to the next leaf. When the larvæ are few in number and nearly mature, each seems to have an individual web more closely woven than the main nest, into which it retreats when disturbed. When this occurs, the larvæ all stop feeding and emit a brownish fluid from their mouths.

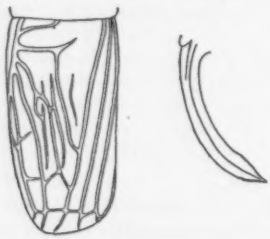
The total length of the feeding period is from twenty-six to thirty days.

When the hibernating larvæ are about to pupate in March they first work their way up toward the surface, so that the pupæ are found just below the roots of the grass.

This paper is apparently the first record of the presence of this insect in the east, the only reference to it which I can find, except that where it was originally described, being by Dr. James Fletcher (Rept. of Ent. and Bot. Dominion Expr. Farms, for 1896, p. 253), where it is reported from Southern Manitoba, and by the same writer in Trans. Roy. Soc. Can., vol. v, sect. iv, p. 224, 1899.

During the spring of 1903 it has made its appearance on a few trees at Amherst (seven miles from Northampton), but no reports of its presence elsewhere have been received. When abundant, it may become a very serious pest to the plum-grower, as the trees attacked are defoliated just at the time when all their energy should be centered in the formation of the fruit.

This cut shows the structure of the musical apparatus of the male and the ovipositor of the female of *Falcicula*, a new genus of Gryllidæ described on page 258 of the Oct. NEWS. The species is *hebardi*, found by Mr. Morgan Hebard at Thomasville, Georgia.



DIXA CLAVULUS Williston —Diptera of St. Vincent, Trans. Ent. Soc. London, '96.—In a paper which recently appeared in the New York State Museum, Bulletin 68, p. 429, a description is given of a fly under the name of *Dixa modesta*. Unfortunately, in drawing up this description, Professor Williston's species was overlooked, and hence it was redescribed under another name.

Upon examination it will be seen that the two descriptions are quite similar, and I have also compared my specimens with a co-type of Williston's species collected by Mr. H. H. Smith, now in the Cornell University Collection and find them identical.

In fresh and in immature specimens the colors are paler or more yellowish than in mature, dried specimens. The rostrum in some specimens is dusky, in others paler. These paler specimens will find a place in the key given (p. 431 l. c.) in the second couplet with *marginata*, from which they may be distinguished by their dark thoracic stripes. The knob of the haltere is dusky.

The following misprints in the above mentioned paper are noted:

Page 413 line 13. For plate 44, fig. 6, read pl. 44, fig. 5.

Page 429 line 3rd, from bottom of page. For fig. 10, read fig. 8 — O. A. JOHANNSEN.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., NOVEMBER, 1903.

We are pleased to see that there is a steady increase in the number of type-written manuscripts that come to the NEWS. We would like very much to make an inflexible rule that all articles sent to the NEWS must be type-written. Quite a number of authors are very careless in writing the names of insects. Because they know the names, they think every one should, and they put the work of translation on the editors. Not infrequently we have wished that we could have left the articles as the printer has set them up, as an object lesson. We are also greatly annoyed at the way some persons sign their names and write their addresses. They think that since they know their own name and where they live, every one else does. Type-written copy makes the compositor's work much easier and reduces the labor of proof reading. Even the signatures or names of persons should be type-written, and where necessary, they could also be hand-written. We not infrequently get letters and words in letters that are almost conducive to profanity. It is to be hoped that hand-writing will soon be a matter of the past, and the only thing left of it the signature of the person, where individuality or identity is necessary. We have some MS. on hand now that gives us "that tired feeling" and desire for a tonic of some kind when we try to read it. Sometimes we just shut our eyes and send it to the printer with a sigh.

Notes and News.

ENTOMOLOGICAL GLEANINGS FROM ALL QUARTERS OF THE GLOBE.

The mosquito doesn't believe in race suicide.

When the devil wants to take a rest he turns the mosquitoes loose.

The sluggard may go to the ant, but the mosquito will meet him more than half way.

MR. HENRY L. VIERECK is now at the Connecticut Agricultural College, New Haven, Connecticut, and all mail should be so addressed.

MR. A. G. WEEKS of Boston is hard at work getting into shape his magnificent illustrated work on the Lepidoptera. It will take several years to complete it.

ON PAGE 271, OCTOBER NEWS I read *C.* (*icindela*), 4 *guttata* nov. var., and on page 273 *C. nigrita* nov. var. Now this method of publishing new varieties has recently become rather prevalent, and something should be said to check it. If the insect is a variety its name is necessarily a trinominal, as *Cicindela sexguttata* var. *quadriguttata*. To publish it as a binomial, as if it were a distinct species, is merely to create needless confusion. In bibliographical work one has to cite what appears in print, and this should not be misleading.—T. D. A. COCKERELL, Colorado Springs, Colo.

THE Ichneumon fly, which is called by the book-learned professors a friendly insect, has been seen by practical orchardists to be the guilty fellow that stings the fruit and gives it the appearance of a pepper box. It destroyed the fruit of Austria and Hungary in Europe, and stung and injured the trees. Some of them were found dead with the stings in the twigs of the trees. Col. A. Harrington of Springfield, Mo., saw this (friendly) insect stinging his fruit, and he got the Moth Catcher and cleared them out and made fine fruit. So this so-called (friend) was seen by an orchardist, A. T. Warner, of Lawrenceville, Ill., stinging his fruit and ruined its commercial value this year, 1902.

Callidryas eubule in New Jersey and Pennsylvania.—While I have long known this species to be of regular occurrence on the coast of Cape May County, N. J., I had not until the present year observed it further north. During August and September, 1903, I spent some days in the pine barrens of New Jersey, and saw *Callidryas* repeatedly all the way from West Creek near the coast to Chatsworth on the N. J. Southern Railroad. Subsequently I found it rather common between Hammonton and Pleasant Mills, and saw several at Camden, and one at Whitings. On September 20th, one was also observed near the mouth of Darby creek, in Delaware County, Pa. I think it very likely that the species occurs regularly through the pine barren district, but possibly it is more abundant this season than usual.—WITMER STONE, Acad. Natural Sciences, Phila.

How long can yellow-jackets "hold their breath?" I found this summer that they could live under water an amazingly long time.

A yellow-jacket's nest the size of my head hung from a rafter in the barn and was evidently going to give trouble, as it was *populous*. At 8 o'clock one night I slipped a butterfly net up over the nest and pinched it shut, taking the nest and every wasp. I sunk the net and all in two feet of water, (the water tub), and my brother put a big flat stone on them to keep the net shut and them under water. At 7 o'clock the next morning we took them out. They seemed cold and uncomfortable, but could crawl, and would soon have been ready to do effective business had we not consigned the whole lot to the flames.

11 hours under water seems a pretty long time even for a yellow jacket.—C. A. THURSTON, Kingston, Pa.

SPHINGIDÆ collected with the assistance of Mr. Hagen, at Miami, Florida, during the latter part of April and the first week in May of 1901.

Enyo lugubris Linn., common; *Hemeroplanes pseudothyreus* Grote, only one specimen; *Amphion nessus* Cram., common; *Chærocampa tersa* Linn., common; *Thorates pergesa*, very common; *Darapsa porcus* Hbn., only one specimen; *Dilophonota obscura* Fab., not common; *Anceryx alope* Dru., only two specimens; *Dilophonota caicus* Cram., only two specimens; *Protoparce carolina* Linn., only two specimens; *Protoparce cingulata* Fab., only three specimens.

Darapsa porcus has probably never been reported before from the United States of North America, while *Hemeroplanes pseudothyreus* has seldom been captured as far north as Florida.

Thorates pergesa was the commonest sphinx of the lot, and although it is not to be found in our latest check-list, yet Mrs. Slosson reported its occurrence in numbers several years ago.—PHILIP LAURENT.

"AGAIN, this past summer, Prof. F. H. Snow has led a collecting expedition into a country where no entomologist had preceded him. As in many a former excursion, Dr. Snow chose a field which from its remoteness and the difficulties and dangers attending its exploration, had been neglected by other scientists, and he has been richly rewarded for his enterprise by the splendid collection of insects secured.

"The party which left Lawrence, July 20th, consisted of Prof. F. H. Snow, Dr. Charles F. Adams, Mr. G. P. Mackenzie, of Kansas City, and Mr. Eugene Smith, of Topeka. They proceeded at once to southeast Arizona. The first stop was made at Congress Junction (Martinas), where they camped ten days in the heart of the great American desert. From this point they went by wagon 50 miles across the Cactus Plain to Bill William's Fork, a branch of the Colorado River. When they first reached the stream there was not a drop of water to be found. They had struck a place where the river disappears in the sand, after the fashion of the Arkansas. Three miles further down, however, they found both water and shade, and here they made their camp.

"The collecting work was highly successful, and as a result of the trip 15,000 specimens, all pinned and labelled, have been brought back. Of these many are species hitherto unknown. 'I should estimate that we have secured at least 50 to 100 species new to science,' Dr. Snow said when questioned on this point.

"The collection includes specimens from all the Orders. The tabulated list of the specimens secured is as follows: Coleoptera, beetles, 5 430; Diptera, flies, 4,500; Lepidoptera, butterflies and moths, 1.926; Hymenoptera, bees and wasps, 1,822; Orthoptera, grasshoppers and crickets, 550; Hemiptera, bugs, 232; Neuroptera, dragon flies, 169; a total of 14,629."

Entomological Literature.

THE ORTHOPTERA OF INDIANA. BY W. S. BLATCHLEY. From the 27th Annual Report of the Department of Geology and Natural Resources of Indiana, 1902, pp. 125-471. Author's Separates issued September 5, 1903, Indianapolis.

In presenting this work to the entomological world, Prof. Blatchley has supplied us with a model for future work along faunistic or state lines. A glance at the map on page 126 will show how thoroughly the state has been examined by the author, and a perusal of the systematic portion of the work will demonstrate how amply he has been rewarded in the extension of the range of many species, and the discovery of quite a few new forms.

After a good preliminary chapter on the external structure of an Orthopterous type, the enemies of the order are treated at some length, and a rather exhaustive bibliography comprising two hundred and twenty-three titles precedes the descriptive catalogue.

The systematic portion of the work contains references to one hundred and forty-eight species, each of which is well described, and the life-history and period of abundance, as well as the distribution (both general and within the state) considered. The illustrations are good, the originals being especially interesting as many represent species never before figured. In all seven new species are described: *Ischnoptera intricata*, *Neotettix hancocki*, *Melanoplus morsei*, *Conocephalus bruneri*, *Nemobius confusus*, *Gryllus americanus* and *G. arenaceus*. Under the Forficulidæ no reference is made to Bormans and Krauss' recent work on that family, and in consequence *Forficula aculeata* is not placed in *Apterygida*. In working out, as far as his material permitted, the relationship of the species of roaches of the genus *Ischnoptera* and some of those usually placed under *Temnopteryx* and *Phyllodromia*, the author has given us by far the most thorough and pains-taking presentation of this knotty problem of sex correlation. The re-discovery of *Temnopteryx deropeltiformis* is a most interesting find, and is especially noteworthy, as both sexes have been secured.

In treating the genus *Stenobothrus* the author has overlooked the fact that this generic name is antedated by Fieber's *Chorthippus*. Regarding *Schistocerca rubiginosa* Prof. Blatchley says, "The mere fact that on one or two occasions, opposite sexes * * * and *alutacea* were found in copulation is no proof of their identity in species;" while on page 180 he states regarding another case, "While I have never taken the sexes *in coitu*, there is no doubt in my mind but that the female of *pennsylvanica* is the roach heretofore known as *Blatta* or *Phyllodromia borealis*." The inconsistency of these two statements is rather striking. There is no doubt that if Prof. Blatchley could examine the extensive series on which the synonymy of the two forms of *Schistocerca* was established, he would be convinced as to the identity of the two species."

The section of the work on the genus *Melanoplus* is remarkly good, among other things the rare *M. impudicus* being found plentiful in Gibson County.

Under the general range of several species of *Xiphidion* (*Xiphidium* Blatchley et auct.), a few records which considerably extend the range of the species to the east have been overlooked. A very interesting record is that of the southern *Miogryllus saussurei*, which was taken in several of the southern counties of the state. Some observations regarding the mating of *Œcanthus* (p. 452) and *Apithes* (p. 458) are of especial interest.

The systematic portion is supplemented by a short study of the life zones of the state, the characteristic vegetation of the Transition and Austroriparian regions being listed. This is fully in keeping with the high standard of the work, and is a phase of the subject which happily is not as much neglected by entomologists as formerly.—J. A. G. R.

Doings of Societies.

A meeting of the Entomological Society of Western Pennsylvania was held at Carnegie Museum, Pittsburg, Saturday, October 3rd. Ten members present. The families AGARISTIDAE to ARCTIIDAE were gone over and a list with data prepared of all species taken in Western Pennsylvania. The ARCTIIDAE to PSYCHIDAE are to be taken up at the next meeting. Mr. Engel exhibited a series of *Arctia vittata* reared from one female to show the different forms. *Vittata*, and varieties *radians* and *phalerata* were included. Geo. Krautwurm exhibited four different species of *Hydrœcia* reared from pupæ found in burdock stems. Raymond J. Pflaum was elected a member.

F. W. FRIDAY, *Secretary*.

The September meeting of the Newark Entomological Society was held on the 13th with President Angelman in the chair and nine members present.

Messrs. Bischoff and Stortz reported the captures of *Sphæridium scarabeoides*, first part of September, generally distributed and common in fresh cow excrement; and 3 specimens of *Lixus jullichii* April 12th.

Mr. Buchholz the capture of *Moma fallax* at Paterson, N. J., May 10th, and a *Sphinx chersis* ♀ at Elizabeth, May 22nd.

Mr. Keller *Arzama vulnifica* in Passaic Co., August 29th.

Mr. Angelman spoke about having seen several specimens of *Catopsilia eubule* in and about Newark September 12–13th.

The October meeting of the Newark Entomological Society was held on the 12th with Vice-president Stortz in the chair and 12 members present.

Messrs. John Martin and J. D. Mayfield were elected to membership.

OTTO BUCHHOLZ, *Secretary*.

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held September 24th, Vice Director H. W. Wenzel presiding. Sixteen persons were present. The death of Prof. A. R. Grote was announced. Dr. Calvert exhibited Riker mounts of insects. He considered them the most convenient mounts for passing around to a class of students. Mr. Rehn exhibited a species of *Heteropteryx* remarkable for size and antigeny. He also exhibited specimens of walking-sticks from the island of Obi in the Moluccas representing probably the first collections from that place. He said they were the property of Mr. Morgan Hebard and doubtless represented a number of new species. Mr. Ilg exhibited Riker mounts of butterflies, some of them showing transformations. Mr. Fenninger exhibited a large unknown species of *Tipula* from Lehigh Gap, Pa. Dr. Skinner made some remarks on the genus *Xenos* and exhibited the three known North American species. The distribution of *Callidryas eubule* was discussed. Mr. W. D. Kearfott was elected an Associate of the Section.

HENRY SKINNER, *Recorder*.

EXCHANGES.

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Wanted.—Life histories in all orders of insects. Will pay cash or give exchange for same. Write what you have, and state lowest cash price.—Denton Bros., Wellesley, Mass.

Desirable Lepidoptera for exchange. Would like to receive lists of good species.—John Comstock, 1572 Ridge Ave., Evanston, Ill.

I will collect Lepidoptera, Coleoptera, Hymenoptera, Hemiptera of this locality, in exchange for Diurnal Ledidoptera of the United States, or named Diurnals of foreign countries. Write at once.—M. E. Hoag. D. D. S., Oakville, Iowa, U. S. A.

I will give Lepidoptera, publications or cash for Smith's "Monograph of the Sphingids," published in Vol. xv, Trans. Ent. Soc., 1888.—H. H. Newcomb, 35 Court Street, Boston.

Parnidæ.—Parnidæ of the world wanted. Will pay cash or give exchange. (Correspondence French, German or English).—William D. Richardson, Fredericksburg, Virginia.

Wanted.—ENT. NEWS, vol. viii, No. 6.—Louis H. Joutel, 164 E. 117th Street, New York City.

Arctians.—Living eggs or larvæ of any North American moths of the genus *Apantesis* wanted for purposes of studying preparatory stages. Will be glad to render help, if possible, as to wants of anyone assisting. Arthur Gibson, Cent. Exp. Farm, Ottawa, Can.

N. A. Lepidoptera desired. Those willing to collect, in exchange for European specimens, please communicate with James McDunnough, care Wilson, 385 Gt. Western Rd., Glascow, Scot.

Lepidoptera.—I have *Paonias astylus, Chalænogramma jasminearum, Sphinx kalmiæ, plebeius* and other Sphingidæ of the Atlantic States for exchange for specimens not in my collection. Send lists.—Prof. Henry Wormsbacher, 122 Hutton St., Jersey City, N. J.

For Exchange.—Several thousand Colorado and Utah Lepidoptera in papers and pinned on small black pins. Will trade for a Winchester repeating take-down shot gun in perfect condition.—Arthur J. Snyder, Belvidere, Illinois.

I have some very fine and rare exotic and native Lepidoptera to exchange for native pupæ and cocoons. Will also take Catocala and Sphinx on pins or in papers. Send small lists to Charles F. Timm, 131 Ralph St., Brooklyn, N. Y.

Wanted Cicindela scutellaris, pulchra, sexguttata, purpurea, formosa, latesignata, fulgida, and vulgaris (any varieties), in as large number as possible. Coleoptera from northern Illinois and Indiana for excnange. Will collect as directed from the fauna of northern Ill.—V. E. Shelford, 5715 Drexel Ave., Chicago, Ill.

I wish to exchange American and European Lepidoptera and Coleoptera for American insects for the season of 1903. I am also a preparator of larvæ.—Karl Haertel, 198 California St., Newton Mass.

Coleoptera.—Paleoxenus Dohrnii Horn exchanged for Elaterids and Buprestids of the U. S. not yet represented in my cabinet.—A. Fenyes, M.D., Pasadena, Cal.

Wanted—for cash—Transactions Am. Entom. Society, Vols. I.-XXVI.; Proc. Entom. Soc. Phila., Vols. I.-IV.; Entomologica Americana, Vol. IV.; Entomological News, Vols. I.-VI., XI., XII.; Canadian Entomologist, Vols. I.-XXXIII.; Riley's Missouri Reports; Fitch's New York Reports; Leconte & Horn's Rhyncophora; works and papers on Aphidæ. Send lists of any other standard entomological works.—E. Dwight Sanderson, College Station, Tex.

I have Beetles, Butterflies, Moths, Catocalæ, spread or in papers, from Illinois, to exchange for U. S. and exotics, or pupæ and cocoons.—A. Mares, 1671 W. 23rd St., Chicago, Ill.

American Coleoptera desired.—Will give Hungarian species in exchange.—Th. Gobyelmann, Jutegyar, Ujpest, near Budapest, Hungaria.

Exchange.—Would like to exchange Coleoptera from Austria for N. American. Correspondence German and French.—Otto Spicack, K. K. Postbeamtor, Sternberg, Mähren, Austria.

Rare Sphingidæ and Catocalæ wanted for cash or exchange.—Geo. J. Keller, 26 Monmouth St., Newark, N. J.

Will exchange California specimens, *Attacus ceanothi* cocoons, etc., for flies caught in other places that also inhabit California.—J. E. Cottle, 1020 Pacific Ave., San Francisco, Cal.

Will have in November, limited number of Porto Rican and Mexican cocoons to exchange. ENT. NEWS, Vol. xiv, No 1 wanted.—J. H. MATTHEWS. 1426 Toronto St., Phila., Pa.

Wanted eggs of *Argynnis diana*.—I. RUSTON, 10 Carlton Road, Workshop, Nottinghamshire, England.

Wanted.—Lepidopterists desiring *Bembecia marginata* and var. *albicoma*, to send exchange lists of North American moths.—HENRY ENGEL, Genl Delivery, Pittsburg, Pa.

I have a few specimens of *C. calleta* and *cinctus* to exchange for rare *sphinx* or pupæ of same.—W. T. BUXTON, 153 Walnut St., Somerville, Mass.

Wanted for cash fertile eggs of *A. luna*, *S angulifera*, *H. io*, *E. imperialis*, *C. regalis*, also of all kinds Sphingids.—ERNST JEHEBER, 118 N. Reservoir Street, Lancaster, Pa.

Wanted.—Complete files, with indexes, of American Entomologist and its successor, the American Entomologist and Botanist; also of Insect Life.—CHAS. S. DAVIS, No. 1910 Fifth St N. W, Washington, D. C.

Wanted.—Cocoons of *A. luna*, *S. cynthia*, *Att promethea*, *Att. Gloveri*, *Att cecropia*, *Hyper Io*, and *Eacles imperialis*. Will pay cash for a few of each.—DR. TILLOTSON, 744 Clinton ave., Rochester, N. Y.

Cortynas wanted.—Good prices or exchange will be given for fine specimens of *albilunata*, *erepta*, *u-album juvenilis*, *medialis*, *senilis-latia*, *cerina*, *speciosissima*, *verona*, *frigida*, *unimoda*, *angelica*, *insulidens*, *furcata*, *sauzælitæ*, *buffaloensis*.—H. H. LYMAN, 384 St. Paul St., Montreal.

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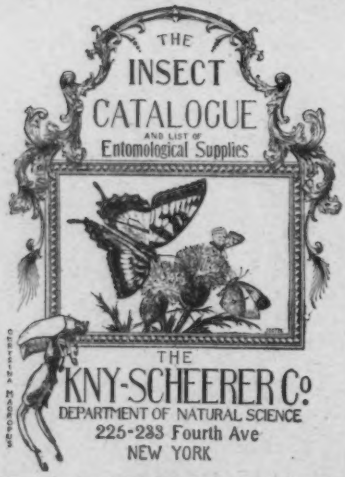

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